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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,462	10/27/2003	Alexander Krymski	M4065.0979/P979	2941

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EXAMINER

NGUYEN, LINH V

ART UNIT	PAPER NUMBER
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2819

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/693,462	Applicant(s) KRYMSKI, ALEXANDER	
	Examiner Linh V. Nguyen	Art Unit 2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 34, 36 - 39 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 - 30, 33, and 38 is/are allowed.
- 6) ☒ Claim(s) 31, 32, 34, 36, 37, 39 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to communication filed on 10/11/05. Claims 1 – 34, 36 – 39 and 44 are pending on this application.

Response to Arguments

2. Applicant's arguments with respect to claims, 31 and 36 have been fully considered but they are not persuasive.

Under Remarks, on pages 20 - 21, with respect to 31 and 36, applicant argued, "the second transfer function of Nakamura et al. is not used exclusively if magnitude is at least equal to a predetermined threshold". Examiner respectfully disagrees from the following:

Fig. 16B of Nakamura et al. disclosing an exclusive first transfer function when the magnitude of analog input signal below the nominal input range (Col. 7 lines 53 – 56), an exclusive second transfer function 16C when the magnitude of the analog input signal is greater than predetermined nominal input threshold (Col. 7 lines 57 – 61), and an exclusive third transfer function Fig. 6D when the analog input signal is within predetermined nominal input threshold (Col. 7 lines 63 – 67). The second or the third transfer function mapping taught by Nakamura et al. per above, clearly read over "magnitude at least equal to a predetermined threshold" of claimed invention, because at least equal to is drawing to equal or greater or lesser or within. Therefore, the second and third transfer mapping function taught by Nakamura et al. disclosed the limitation "at least equal to" for second transfer function of claimed invention.

Under Remarks, on page 22, with respect to claim 44, applicant argued, "the fixed 12-bit-quantization of Tarnoff is not a variable quantization". However the subject matter variable of bit quantization is not in the claimed invention. Therefore, the converter (55, 65, 75) for quantizing variable of color level input signals (Red level, Green level, Blue level) taught by Fig. 5 of Tarnoff et al. disclosed the variable quantization of the claimed invention (*Note: to overcome the cited prior art, applicant needs to change "variable" to variable-bit*).

Per discussed above, the same rejection from previous office action is applying to this office action

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 31, 32, 34, 36, 37, and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al. U.S. Patent No. 6,864,820.

Regarding claim 31, Fig. 14 and 16A-D and Col. 12 lines 33 – 42 of Nakamura et al. disclose a method for converting an analog signal to a digital word comprising: measuring a magnitude of said analog signal (143, 145); if said magnitude is not greater

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than a predetermined threshold (Col. 7 lines 53 – 57), mapping (147) said magnitude to a digital word exclusively with a first transfer function (Col. 7 lines 53 – 57), and if said magnitude is at least equal to said predetermined (Col. 7 lines 57 – 61), mapping (149) said magnitude to the digital word exclusively with a second transfer function (Col. 7 lines 57 – 61); wherein said first transfer function (147) is not included in said second transfer function (149), and said second transfer function (149) is not included in said first transfer function (147).

Regarding claim 32, wherein said first transfer function (147) maps each magnitude (A_{in}) below said predetermined threshold ($-1V$) to a corresponding reference signal (Fig. 12 [Nominal input range]) in a linear manner (Fig. 17C disclosing linearity mapping of A_{in} and D_{out} between -1 and $+1V$ of predetermined threshold voltage).

Regarding to claim 34, wherein said second transfer function (Fig. 16C) maps each magnitude at least equal to said predetermined threshold ($1V$) to corresponding reference signals ((Fig. 12[Nominal input range]) in a logarithmic manner (Fig. 16C [2^{n+1}])).

Regarding claims 36, 37 and 39, the claims incorporated substantially the same subject matter as of claims 31, 32 and 34 respectively, and rejected along the same rationale.

5. Claim 44 is rejected under 35 U.S.C. 102(e) as being anticipated by Tarnoff et al U.S. Patent No. 6,829,012.

Fig. 5 of Tarnoff et al. discloses of an imaging system comprising: a pixel array (54, 64, 74), an analog to digital converter circuit (12-Bit A-Ds) that receives analog signals (various colors level) from the pixel array and converts the analog signals to digital signals (output of 12-Bit A-Ds) with a variable level of quantization (Red level, Green level, Blue level), said analog to digital convert (12-Bit A-Ds) circuit comprising a linear converter (12-Bit A-Ds; Col. 15 lines 47 - 48), for producing intermediate values (output of 12-Bits A-Ds) from said analog signals, and a processing circuit (Fig. 6 [500]) that remaps value said intermediated values produced by said linear converter (Output of 12 – Bit A- Ds) using mapping table (Fig. 6 [539]. Col. 17 lines 29 - 31).

Allowable Subject Matter

6. Claims 1 – 30, 33, and 38 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 1, 11, and 21, in addition to other elements in each respective claim, the prior art fails to teach or suggest a control circuit for determining the digital word corresponding to the input signal by repeatedly: comparing the magnitude of the input signal with the magnitude of a most recently generated reference voltage of said sequence, incrementing said counter, and causing said ramp generator to generate a new one of said sequence until the magnitude of the most recently generated reference voltage of said sequence exceeds the magnitude of said input signal.

With respect to claims 33 and 38, in addition to other elements in each respective claim, the prior arts fail to teach or suggest converter having first and second transfer function wherein said second transfer function maps a set of non-sequential and increasing magnitudes each at least equal to said predetermined threshold to corresponding reference signals in a linear manner.

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571)

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272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Robert Pascal can be reached at (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (571-273-8300) for regular communications and (571-273-8300) for After Final communications.

12/12/05

Linh Van Nguyen

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A handwritten signature in black ink, appearing to read 'Linh Van Nguyen', is written over the typed name.